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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/663,257

Filing Date: September 16, 2003

Appellant(s): BEILFUSS ET AL.

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Robert A. Madsen  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 7/14/2008 appealing from the Office action mailed 2/12/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: the rejection of claims 18-21, 23, 30-

48, 57 and 58 under 35 USC 103 over Smith et al. (USPN 7,078,005 B2) and Beilfuss et al. (US 2001/0021711 A1) is to be reviewed on appeal, however, Appellant's brief presents arguments relating to a restriction requirement (page 7 of Appeal Brief dated 7/14/2008). This issue relates to petitionable subject matter under 37 CFR 1.181 and not to appealable subject matter. See MPEP § 1002 and § 1201. Specifically, Appellant alleges withdrawn claims 24 and 25 contain subject matter that is included in the elected invention. However, 37 CFR 1.144 states,

After a final requirement for restriction, the applicant, in addition to making any reply due on the remainder of the action, may petition the Director to review the requirement. Petition may be deferred until after final action on or allowance of claims to the invention elected, but must be filed not later than appeal. A petition will not be considered if reconsideration of the requirement was not requested (see § 1.181).

Thus, Appellant's arguments drawn to the restriction requirement relates to non-appealable subject matter and, as such, said arguments are not applicable to said rejection.

### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

### **(8) Evidence Relied Upon**

7,078,005B2	Smith et al.	7-2006
2001/0021711 A1	Beilfuss et al.	9-2001

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 18-21, 23, 30-48, 57 and 58 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (USPN 7,078,005 B2) and Beilfuss et al. (US 2001/0021711 A1).**

Smith teaches an H<sub>2</sub>S-scavenger product comprising (a) a reaction product derivable by reaction of a carbonyl group-containing compound with an alcohol, thiol, amide, thioamide, urea or thiourea, said alcohol, thiol, amide, thioamide, urea, thiourea having no amine function, and (b) an amine for use in reducing or eliminating hydrogen sulphide in natural gas or crude or refined oil streams (abstract; col. 5, lines 26-36; col. 6, lines 50-56). Smith further teaches examples of amines including a bisoxazolidine such as N,N'-methylene-bisoxazolidine which have higher basicity and buffering capacity (col. 6, lines 16-28). Smith teaches utilizing a solvent including glycol, ethanol and mixtures thereof as well as water to dissolve the reaction product (col. 5, lines 49-55). Said solvent reads on the “at least one additional additive” as claimed in instant claim 30. Smith further teaches that the solvent is in concentrations form 10 to 95% by weight and the H<sub>2</sub>S-scavenger product comprises at least 10% by weight of the reaction product (col. 5, lines 57-61). Said percentages read on the ratios claimed in the instant claims 32-35 and 37. Smith also teaches the use of water-free solvents as well as the H<sub>2</sub>S-scavenger product being substantially water-free (col. 5, line 7; claim 21). Said teachings read on “anhydrous” as claimed in the instant claim 40 as well as the percentages claimed in instant claims 38 and 39 because “0%” is within the claimed percentages of “up to about 5%” and “up to about 1%”.

It is noted that the instant claims are product claims and any intended use recitation such as “preservative” (all claims) or “is utilized for...” (claims 57 and 58) does not alone show patentable distinction. A recitation of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. In other words, if the prior art structure is capable of performing the intended use, then it meets the claim.

It is also noted that Smith is silent to the particular limitation, “substantially absent of an iodopropynyl compound and a derivative of 1H-benzimidazol-2-carbamic acid”, however the mere absence of said iodopropynyl compound and derivative of 1H-benzimidazol-2-carbamic acid fulfills said limitation.

Smith is silent to the particular N,N'-methylene-bisoxazolidine, N,N'-methylenebis(5-methyloxazolidine).

Beifuss teaches bactericidal and fungicidal liquid preparations for industrial products such as a fuel additive comprising at least one bactericidal N-formal (title; abstract; paragraph [0017]). Beifuss teaches particular N-formals including amines such as oxazolidines (e.g. 5-methyloxazolidine and monoethanolamine) (paragraph [0018]). Beifuss also teaches the particular N-formal, 3,3'-(methylenebis (5-methyloxazolidine) is preferred (paragraph [0019]). (abstract; paragraphs [0017]-[0019]). Beifuss further teaches that N-formals such as the aforementioned possess

alkalinizing and buffering properties, as well as bactericidal properties (paragraph [0005]).

One of ordinary skill in the art at the time of the invention would have been motivated to include the particular N-formal, 3,3'-(methylenebis(5-methyloxazolidine) because of its known bactericidal properties and its effectiveness in industrial products. Furthermore, Smith and Beilfuss both teach that said amines share the same properties including buffering and alkalinizing properties and are utilized in the same industrial products such as a fuel additive. A practitioner would have reasonably expected substitution of N,N'-methylenebisoxazolidine with 3,3'-(methylenebis (5-methyloxazolidine) in the composition advanced by Smith would produce a H<sub>2</sub>S-scavenger and/or a bactericidal composition. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the particular N,N'-methylenebisoxazolidine, 3,3'-methylenebis(5-methyloxazolidine) with a reasonable expectation of success because the prior art suggests that the genus N,N'-methylenebisoxazolidine and its species, 3,3'-methylenebis(5-methyloxazolidine) are both successfully used for the same purpose, that is, in industrial products such as fuel additives and both possess similar properties including buffering/alkalinizing properties, in other words, the aforementioned compounds are art-recognized functional equivalents.

As discussed above, Smith teaches solvents including ethanol, glycol and mixtures thereof. Smith is silent to the particular solvent, phenoxyethanol.

Beilfuss also teaches the addition of solvents including alcohols, glycols and mixtures thereof and preferably phenoxyethanol (paragraph [0023]).

One of ordinary skill in the art would have been motivated to include the particular solvent, phenoxyethanol because both Smith and Beilfuss teach equivalent solvents that can be interchangeable for similar active agents. Absent of unexpected results, a practitioner would have reasonably expected a composition comprising solvent compatible with 3,3'-(methylenebis (5-methyloxazolidine). Thus, in Smith it would have been obvious to one of ordinary skill in the art at the time the invention was made to include phenoxyethanol as suggested by Beilfuss.

Smith is silent to the particular percentage ranges claimed in the instant claims 41-48, however it would be within the knowledge of one skilled in the art to optimize a composition by way of routine experimentation. Additionally, Beilfuss teaches active ingredient percentages of >50%, preferably >65%, and in particular >75% and accordingly, the solvent percentages are <50%, preferably <35%, and in particular <25% (paragraph [0023]). Beilfuss also teaches particular percentages of the N-formals being from 1 to 99%, preferably 10 to 95%, more preferably 20 to 90%, and in particular 40 to 90% (paragraph [0018]). Absent of unexpected results, a practitioner would have reasonably expected an optimized composition comprising 3,3'-(methylenebis(5-methyloxazolidine)), urea and, if necessary, phenoxyethanol in the percentages claimed. Thus, in Smith it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the particular percentages claimed by applicant.

### **(10) Response to Argument**

#### **35 USC § 103 rejection of claims 18-21, 23, 30-48, 57 and 58 over Smith et al. and Beilfuss et al.**

In the appeal brief dated 7/14/2008, Appellants assert that the combination of Smith and Beilfuss fail to render the claimed invention obvious because:

- I. There is no teaching, suggestion, or motivation to add a bactericidal material to the H<sub>2</sub>S scavenger product of Smith (pages 4-5 of Brief);
- II. There is no teaching, suggestion, or motivation to add the bactericidal material of Beilfuss to a H<sub>2</sub>S scavenger product (pages 5-6 of the Brief); and
- III. The combination fails to teach the features of claims 18 and 20 (pages 6-8 of the Brief). Specifically, Appellant argues that the H<sub>2</sub>S scavenger product of Smith comprises a reaction product formed by reacting a carbonyl group-containing compound with an alcohol, thiol, amide, thioamide, urea or thiourea and asserts that it is the object of Smith to utilize the reaction product, not the reactant (page 6 of Brief). Appellant further asserts that once the reaction product is formed from, for example, a carbonyl-containing group and urea, there would be no "urea" *per se* to "utilize" (page 7 of Brief). Appellant also states, "neither publication teaches preservatives with the problem of the emission of formaldehyde during storage, let alone sets out to solve the problem" (page 8 of Brief).

In response, it is respectfully submitted that Appellant's claims are drawn to a preservative comprising a) at least one formal and b) at least one emission reducing additive comprising urea. Appellants elected the particular formal species, N,N'-methylenebis(5-methyloxazolidine).

Smith teaches an H<sub>2</sub>S scavenger product comprising a) a reaction product derivable by a reaction of a carbonyl group containing compound with an alcohol, thiol, amide, thioamide, urea or thiourea, preferably the reaction of formaldehyde with an amine-free alcohol or urea, and b) an amine such as N,N'-methylenebisoxazolidine for use in reducing or eliminating hydrogen sulphide in natural gas or crude or refined oil streams (abstract; col. 4, line 37; col. 5, lines 26-36; col. 6, lines 23-24 and 50-57). For virtually all chemical reactions, it is impossible for a reaction to proceed to 100% completion, thus unreacted reactants are still present once the chemical reaction has reached equilibrium. Thus, one of ordinary skill in the art would expect that the reaction product of a) described by Smith would be accompanied by unreacted, for example, formaldehyde and urea. Thus, Smith teaches the generic combination of urea and an amine such as N,N'-methylenebisoxazolidine. Smith additionally teaches that said amine has a higher basicity and buffering capacity (col. 6, lines 27-28). It is noted that the "comprising" (i.e., open-ended) language in the instant claims allows for other components to be present and does not exclude a reactionary product utilizing urea.

Smith is silent to the particular N,N'-methylenebisoxazolidine species, N,N'-methylenebis(5-methyloxazolidine).

Beilfuss teaches the particular N,N'-methylenebisoxazolidine, 3,3'-methylenebis(5-methyloxazolidine) as an N-formal for use in industrial products such as a fuel additive (abstract; paragraphs [0017]-[0019]). Beilfuss further teaches that N-formals such as the aforementioned possess alkalinizing and buffering properties, as well as bactericidal properties (paragraph [0005]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the particular N,N'-methylenebisoxazolidine, 3,3'-methylenebis(5-methyloxazolidine) with a reasonable expectation of success because the prior art suggests that the genus N,N'-methylenebisoxazolidine and its species, 3,3'-methylenebis(5-methyloxazolidine) are both successfully used for the same purpose, that is, in industrial products, for example, as additives in fuel and both possess similar properties such as buffering/alkalinizing properties, in other words, the aforementioned compounds are art-recognized functional equivalents.

Regarding arguments I and II, Smith teaches the generic combination of urea and an amine such as a bisoxazolidine, for example, N,N'-methylenebisoxazolidine. Beilfuss is relied upon for its teaching of the particular N,N'-methylenebisoxazolidine, 3,3'-methylenebis(5-methyloxazolidine). Both Smith and Beilfuss teach that both N,N'-methylenebisoxazolidine and 3,3'-methylenebis(5-methyloxazolidine) are used for the same purpose (i.e., fuel additives) and both possess similar buffering/alkalinizing properties. Thus, the art effectively teaches that N,N'-methylenebisoxazolidine and 3,3'-methylenebis(5-methyloxazolidine) are art-recognized functional equivalents and thus,

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substitution of one for the other would be *prima facie* obvious. Beilfuss further teaches that 3,3'-methylenebis(5-methyloxazolidine) also possesses a bactericidal property. Because N,N'-methylenebisoxazolidine and 3,3'-methylenebis(5-methyloxazolidine) have the same functional groups, one of ordinary skill in the art would reasonably expect that both compounds also possess said bactericidal property.

Regarding argument III, it is respectfully submitted that claims 18 and 20 do not limit the amount of each of the ingredients. Thus, a single molecule of each ingredient reads on said claims. While the examiner acknowledges that Smith teaches a reaction product of a carbonyl-containing compound and urea, the examiner respectfully disagrees with Appellant's assertion that once the reaction product is formed, no urea would be left to utilize. For virtually all chemical reactions, it is impossible for a reaction to proceed to 100% completion, thus unreacted reactants are still present once a chemical reaction has reached equilibrium. Thus, one of ordinary skill in the art would expect that the reaction product of a carbonyl-containing compound and urea would be accompanied by unreacted carbonyl-containing compound and urea. Regarding Appellant's assertion "neither publication teaches preservatives with the problem of the emission of formaldehyde during storage, let alone sets out to solve the problem", it is respectfully submitted that the prior art need not recognize the same problem. For the reasons as stated above, the combined teachings of Smith and Beilfuss render the instant claims obvious.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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